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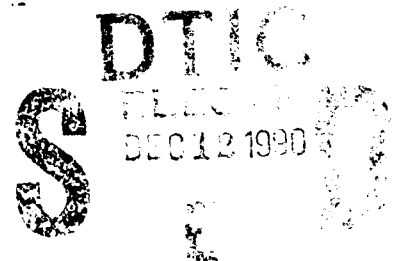
AFIT/GLM/LSM/90S-39

A SAMPLING OF THE  
HISTORICALLY BLACK COLLEGE  
PERSPECTIVE ON  
THE DEPARTMENT OF DEFENSE  
FIVE PERCENT GOAL

THESIS

Norman W. Murray, Captain, USAF

AFIT/GLM/LSM/90S-39



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THESIS

Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Logistics Management

Norman W. Murray, B.A.

Captain, USAF

September 1990

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Norman W. Murray

## Table of Contents

|  | Page |
|--|------|
| Acknowledgements.....  | ii   |
| List of Tables.....  | iv   |
| Abstract.....  | v    |
| I. INTRODUCTION.....   | 1    |
| General.....   | 1    |
| Specific Problem.....  | 2    |
| Research Hypothesis.....   | 3    |
| Research Objectives.....   | 4    |
| Investigative Questions.....   | 4    |
| Justification.....   | 4    |
| Assumptions.....   | 4    |
| Background.....  | 5    |
| Scope.....   | 7    |
| Limitations.....   | 7    |
| II. LITERATURE REVIEW.....   | 8    |
| Legislative History of the DOD Five<br>Percent Goal.....                   | 9    |
| The National Association for Equal Opportunity<br>in Higher Education..... | 12   |
| III. METHODOLOGY.....  | 14   |
| IV. ORIGIN OF BLACK COLLEGES AND UNIVERSITIES.....                         | 17   |
| Role.....  | 24   |
| V. CONCLUSIONS AND RECOMMENDATIONS.....                                    | 28   |
| Data Analysis.....   | 28   |
| Problems and Suggestions.....  | 29   |
| Researcher Comments.....   | 37   |
| Researcher Recommendations.....  | 42   |
| Conclusions.....   | 44   |
| Bibliography.....  | 47   |
| Vita.....  | 50   |

## List of Tables

| Table                                | Page |
|--------------------------------------|------|
| I. DOD Obligations to HEIs.....      | 3    |
| II. DOD R&D Obligations to HEIs..... | 6    |

Abstract

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This study sampled the historically black college and university (HBCU) perspective on the Department of Defense Five Percent Goal. The goal attempts to award five percent of Department of Defense (DOD) contracts and other obligations to historically black colleges and universities, minority institutions, and small and disadvantaged businesses. The applicable obligations are in the areas of: procurement; research, development, testing, and evaluation; construction; and operations and maintenance.

Each college was asked to comment on what black colleges need to become more competitive in the DOD contract award arena. The colleges were also asked to suggest ways that DOD could help in this regard. Their comments and suggestions comprise the second section of chapter V. The prevailing theme was a need to invest in research and development (R&D) capability building at the HBCUs.

The Wilcox Rank-Sum Test was conducted to determine the immediate impact of the five percent goal on R&D obligations to HBCUs (The five percent goal took effect in 1987). The results indicated no significant difference between the HBCU percentage of DOD higher education institution R&D



obligations from the 1984-1986 sample and the 1987-1988 sample.

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A SAMPLING OF THE  
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I. INTRODUCTION

General

The American labor force is changing:

... emerging United States labor demographics suggest that tomorrow's pool of available workers will be smaller, and underprepared in basic workplace skills. Demographic trends also point to a future workforce characterized by more women, more older persons, more of the disadvantaged, and more minority members. These trends make it clear that management must begin to invest in human 'capital formation', just as businesses traditionally have invested in plans and equipment. (1:46-47)

To be productive in an increasingly global economy, workers must be trained and exposed to some type of job related work experience. There is the opinion that this training and job related work experiences are not readily available to all.

Over the past 20 years, the real income of blacks who "play by the rules" has fallen by about a third, and their chances of getting into or staying in the middle class have been cut in half. Indeed, at a time when the national economy is strong and unemployment rates are dropping, blacks in the United States on all levels of society continue to lose economic ground at

a precipitous rate, even when they follow the traditional American stepping stones to success. 'People are playing by the rules and losing the game' says David Ellwood, a Harvard economist specializing in poverty issues. 'Then what is the point in playing by the rules? If the only choice is between being welfare poor or working poor, it's not so clear what people are going to choose.' ...The research announced by several social scientists at a recent conference on the underclass and urban poverty at Northwestern University in Evanston, Ill., represents an important warning to lawmakers and public policy experts. (2:1)

A manifestation of this phenomenon is the difficulty black colleges experience when trying to procure Department of Defense (DOD) contracts. Our lawmakers have attempted to address the problem, but how is the effort faring?

#### Specific Problem

DOD research and development (R&D) obligations to higher education institutions (HEIs) has averaged \$822.65 million for the past several years (1978-1988) (See Table I). The black college share of this sum is abysmal. Many historically black colleges and universities (HBCUs) have expressed an interest in obtaining R&D contracts and grants but by and large they are locked out of this arena. The most significant barrier to their unimpeded entry into this area is a lack of R&D capacity, specifically, facilities and equipment.

TABLE I

DOD OBLIGATIONS TO HEIs (In Millions of Dollars)

| Year | Total Obligation | R&D Obligations | R&D<br>Percentage<br>Of Total |
|------|------------------|-----------------|-------------------------------|
| 1965 | 267.9            | 267.9           | 100%                          |
| 1966 | 278              | 278             | 100%                          |
| 1967 | 264.1            | 264.1           | 100%                          |
| 1968 | 243.1            | 243.1           | 100%                          |
| 1969 | 278.7            | 278.7           | 100%                          |
| 1970 | 265.5            | 265.5           | 100%                          |
| 1971 | 249              | 249             | 100%                          |
| 1972 | 243.9            | 243.9           | 100%                          |
| 1973 | 232.9            | 232.9           | 100%                          |
| 1974 | 184.4            | 184.4           | 100%                          |
| 1975 | 190.5            | 190.5           | 100%                          |
| 1976 | 211.9            | 211.9           | 100%                          |
| 1977 | 267.3            | 267.3           | 100%                          |
| 1978 | 452.3            | 452.3           | 100%                          |
| 1979 | 528.7            | 528.7           | 100%                          |
| 1980 | 555.9            | 555.9           | 100%                          |
| 1981 | 748.2            | 700.5           | 93.62%                        |
| 1982 | 873.1            | 813.7           | 93.20%                        |
| 1983 | 954.4            | 913.3           | 95.69%                        |
| 1984 | 965.7            | 827.8           | 85.72%                        |
| 1985 | 1067.1           | 908.9           | 85.17%                        |
| 1986 | 1214             | 1055            | 86.90%                        |
| 1987 | 1297.9           | 1098.9          | 84.67%                        |
| 1988 | 1385.8           | 1194.2          | 86.17%                        |

SOURCE: National Science Foundation

Research Hypothesis

DOD's effort to assist black colleges and universities with obtaining DOD contracts does not fully address the barriers preventing the schools from obtaining these contracts.

### Research Objectives

This research effort is intended to determine how DOD is meeting the research and development contract procurement needs of HBCUs. It is also intended to provide DOD with suggestions as to how it can improve its efforts to assist the HBCUs.

### Investigative Questions

- 1) How is DOD implementing the five percent goal?
- 2) How does DOD determine the effectiveness of its efforts?
- 3) What do the HBCUs feel they need to be more competitive in the DOD contract award arena?
- 4) What do the HBCUs think DOD can do to assist them in their efforts to obtain more DOD contracts?

### Justification

Congress has passed legislation to aid the HBCUs, but considering these austere times with a large Federal deficit, an impending DOD budget cut and most recently, the Savings and Loan crisis, we need a plan that will produce positive results.

### Assumptions

The HBCUs do in fact wish to contract with the Government, and DOD wishes to assist the HBCUs in this

endeavor. It is also assumed that DOD will have no qualms about revealing their plans for implementing the five percent goal and that the HBCUs will be willing to express their views on the subject.

#### Background

Black college and university participation in the DOD contract procurement domain, especially in the research and development sphere is less than desirable. These schools have a long history of struggling in this area.

The National Science Foundation (NSF) tracks the total amount of money for scientific research (including money for construction of facilities to conduct research) received by each educational institution from the Federal Government. This includes contracts and grants. The Foundation collects this information annually from 15 Federal agencies including the Department of Defense. It is required to report to the President and Congress annually (3:v). Statistics from the National Science Foundation show DOD research and development awards to higher education institutions (HEIs) comprised approximately 86 percent of total DOD obligations to HEIs from 1984-1988 and an even higher percentage in preceding years (see Table I). The HBCU share of these obligations has averaged less than one percent for the past several years (see Table II). The table also shows an

overall decline in the HBCU share of these obligations over the past three years.

TABLE II

DOD R&D OBLIGATIONS TO HEIs (In Millions of Dollars)

| Year | All HEIs      | HBCUs     | HBCU Percentage Of<br>HEI Total |
|------|---------------|-----------|---------------------------------|
| 1984 | 827,800,000   | 3,948,000 | .476%                           |
| 1985 | 908,900,000   | 4,073,000 | .448%                           |
| 1986 | 1,055,000,000 | 3,055,000 | .289%                           |
| 1987 | 1,098,900,000 | 2,928,000 | .266%                           |
| 1988 | 1,194,200,000 | 3,288,000 | .275%                           |

Source: Richard J. Benoff, National Science Foundation

Another point of interest is the current management of our federally funded research and development centers (FFRDCs). FFRDCs are R&D organizations that are formed to meet a particular Federal agency's R&D objective which cannot be effectively met by existing resources. The majority of or all of the financial support for these organizations is received from the Federal Government. In general, these research facilities are owned or funded by the Government. Eighteen of these facilities are managed by institutions of higher education. Institutions of higher education perform about half of the Nation's basic research and is a major source of scientists and engineers. A school that has access to one of these FFRDCs has a definite

advantage. No black college or university has been selected as a major manager for one of these facilities (3).

#### Scope

- The DOD Five Percent Goal applies to historically black colleges and universities, minority institutions (MIs), and small disadvantaged businesses (SDBs) (4). This research effort however, will focus on the historically black colleges and universities.

#### Limitations

Limiting factors were the degree of cooperation received from the many DOD small and disadvantaged business utilization offices, as well as the number of responses from the HBCUs. Determining the appropriate point of contact at the HBCUs and establishing contact with that individual proved to be a limiting factor also.



## II. LITERATURE REVIEW

American minority groups (essentially those Americans other than healthy white males, that meet certain Government financial criteria) are demanding more of an opportunity to determine their own destinies. Their collective voices have grown stronger over the years, and American lawmakers are listening. Congress is attempting to help certain minority groups obtain more contracts from the Department of Defense (DOD) through the Department of Defense Five Percent Goal.

Since the HBCUs are the focus, let us define the entity: An historically black college or university is an institution of higher learning established prior to 1964 for the purpose of educating black Americans. Its principal mission must also currently be the education of black Americans, and it must be accredited or making reasonable progress toward accreditation by an approved accrediting body (5:23). This is not to say HBCUs only educate blacks. The enrollment policy was not and is not restricted to blacks only (Local governments discouraged non-blacks from enrolling at black educational institutions though). Also, HBCUs have traditionally employed white and other non-black faculty members.

The scope of this discourse will be limited to describing the DOD Five Percent Goal, how it is being

applied to the HBCUs, and the legislative history related to this human resource development initiative. A capsulized history of the events surrounding the drive to educate American blacks will also be presented. Concluding will be a summary of black college problem areas in contracting with DOD, as well as some DOD undertakings to assist the black colleges and some proposed suggestions to alleviate or ameliorate these problems.

#### Legislative History of the DOD Five Percent Goal

There is the perception that minority groups, especially socially disadvantaged minority groups, (The Government presumes Blacks, Hispanics, Native Americans, Asian Pacific Americans, and members of smaller groups as designated by the Small Business Administration, to be socially disadvantaged (6:1-4)) are receiving less than their fair share of Department of Defense (DOD) contracts. Congress partially addressed this issue by requiring the Department of Defense (DOD) to provide contracting technical assistance and other aid to small disadvantaged businesses (SDBs), minority institutions (MIs), and historically black colleges and universities (HBCUs). This requirement spawned the DOD Five Percent Goal.

Public Law (P.L.) 99-661 (1987 National Defense Authorization Act, section 1207) established a Department of

Defense goal to award five percent of DOD prime and subcontracts to small disadvantaged businesses, historically black colleges and universities and minority institutions (This is a combined goal of five percent for the three entities; there is no separate goal for HBCUs). It authorizes the use of less than full or open competition to award procurements to SDBs, HBCUs, and MIs. It also allows the contract to be awarded for up to 10 percent above fair market price (6:I-9). The five percent goal applies to contracts in procurements, research, development, test and evaluation, construction and operations and maintenance (6:I-1).

In order to implement the program, DOD plans to provide technical assistance and training sessions to eligible clients who wish to contract with DOD. It also seeks to encourage prime contractors to subcontract with SDBs, MIs, and HBCUs (6:I-9). P.L. 100-180 (1988 National Defense Authorization Act, section 806), charges the Secretary of Defense with ensuring substantial progress in increasing DOD contract awards to section 1207 (P.L. 99-661) groups (7). Public Law 101-189 extends this effort through 1993 (8).

Executive Order (E.O.) 12677 (April 28, 1989) is an effort to:

... advance the development of human potential, to strengthen the capacity of historically black colleges

and universities to provide quality education, and to increase opportunities to participate in and benefit from Federal programs... (7:18869)

E.O. 12677 established an Advisory Commission, the President's Board of Advisors on Historically Black Colleges and Universities. One of the many responsibilities of the Board of Advisors is to provide the President with advice on how to increase the private sector role in strengthening HBCUs.

Particular emphasis shall be given to facilitating technical, planning and development advice to historically Black colleges and universities, with the goal of ensuring the long-term viability of these institutions. (9:18869)

P.L. 95-507 requires each Federal agency with procurement authority to maintain an Office of Small and Disadvantaged Business Utilization (OSDBU). The purpose of this office is the promotion of small and disadvantaged businesses in Government procurement opportunities. The specialists that work for the Office of Small and Disadvantaged Business Utilization are called SADBUSs. These SADBUSs are essential to the five percent goal, they work with SDBs and small businesses to help them do business with DOD (10). They will also work with HBCUs. Part of the five percent goal plan is to teach or encourage HBCUs to aggressively market their capabilities as though they were small businesses.

As stated earlier, the focus will be the Department of Defense Five Percent Goal and how it relates to historically black colleges and universities.

The National Association for Equal Opportunity in Higher Education

The National Association for Equal Opportunity in Higher Education (NAFEO), the membership association of the nation's historically and predominantly black colleges and universities, was founded in 1969. It is an informed voice for presenting the needs and views of the black colleges and universities and acts as a clearinghouse of information pertaining to HBCUs. It also acts in a coordinating capacity with those working in the black higher education area (11).

NAFEO obtained a grant from the government to assist it in its efforts to help the black colleges. A capabilities document (12) prepared by NAFEO, is designed to assist the DOD in identifying and utilizing the resources of the historically black colleges and universities and other minority institutions. In developing this capabilities document, NAFEO attempted to identify the institutional and faculty capabilities as well as the strengths of the HBCUs and minority institutions that indicated a desire to participate in the DOD Five Percent Goal. The three-part survey provides a broad overview of the academic

capabilities and strengths of the HBCUs and minority institutions in engineering, computer science, chemistry, biology, botany, physics, mathematics, communications, agriculture, and other related sciences and technologies (12:vi). NAFEO has subcontracted with the following organizations to assist the HBCUs:

1. TRACTELL, INC is assisting HBCUs in developing a campus based contracts/grants management system to include proposal writing.
2. Florida Memorial College and the University of Arkansas, Pine Bluff are promoting liaisons between major research institutions and HBCUs.
3. Southern University-Baton Rouge uses a computer to scan the Commerce Business Daily on a weekly basis, sending information on potential contracting opportunities to other HBCUs.

NAFEO publications of potential interest to HBCUs include: Program Opportunities in the U.S. Department of Defense for Higher Education Institutions: A NAFEO/DOD Survey, A Guidebook for R&D Acquisition and Management for HBCU/MIs in the Department of Defense Environment, and Barriers To and Strategies for HBCU/MI Participation in DOD Initiatives (13:2).

### III. METHODOLOGY

This research is designed to reveal the HBCU perspective on barriers to contracting with DOD and what DOD can do to shore up its efforts to assist in this regard. The first step of the methodology involved a letter to the OSDBU of each of the military services and the Defense Logistics Agency. The letter introduced myself as the researcher with a brief purpose statement and requested a copy of each activity's plan to implement the DOD Five Percent Goal. The plan's objective was also requested (what problem is being attacked) as well as the method to determine the effectiveness of the plan. The next step was a letter to NAFEO's list of HBCUs requesting their perspective on the barriers they face obtaining Department of Defense contracts. Suggestions as to how DOD can improve its efforts to assist them was also solicited. Telephone interviews with representatives of HBCUs (the institution's president or an individual designated by the president that is knowledgeable in DOD/HBCU contracting matters) or written responses provided the necessary data (See following list of responding black colleges and universities).

RESPONDING BLACK COLLEGES AND UNIVERSITIES

Alabama A&M University  
Alcorn State University  
Bethune-Cookman College  
Central State University  
Clark-Atlanta University  
Concordia College  
Dillard University  
Fayetteville State University  
Fisk University  
Florida Memorial College  
Florida A&M University  
Fort Valley State College  
Grambling State University  
Hampton University  
Harris-Stowe State College  
Howard University  
Johnson C. Smith University  
Lewis College of Business  
Meharry Medical College  
Morehouse School of Medicine  
North Carolina A&T State University  
Oakwood College  
Paul Quinn College  
Philander Smith College  
Prairie View University  
Savannah State College  
Shaw University  
South Carolina State College  
Spelman College  
Stillman College  
Tennessee State University  
Trenholm State Technical College  
Winston-Salem State University  
Xavier University



An interview with Mr. Richard Bennof, a science resources analyst with the NSF, provided me with the dollar amount of DOD research and development obligations to all HEIs and HBCUs for 1984-1988 (Please see Table II) (14). He stated that 1989 data is unavailable at this time.

The Wilcox Rank-Sum Test was conducted with a commercial software package, Statistix II. This nonparametric statistical technique determines if there is a significant difference between the distribution of samples. The samples in this case being the black college percentage of DOD R&D obligations to higher education institutions in the years just prior to the DOD Five Percent Goal going into effect (1984-1986), and more recent obligations to HBCUs (1987-1988). The same data was analyzed to determine if there is a significant difference in actual dollar amount of awards to HBCUs for the same time period. This data was selected as an indicator because most DOD obligations to HEIs are R&D obligations. It is also reasonable to expect DOD would not wish to decrease other obligations to HBCUs while trying to increase R&D contracts and grants awarded to HBCUs.

#### IV. ORIGIN OF BLACK COLLEGES AND UNIVERSITIES

Black colleges and universities were systematically deprived and stolen from by federal and local governments either by direct action or by failure to act. This chapter presents a brief history of the black colleges and universities as well as a case for their continued existence. Most historically black colleges were established in the South after the Civil War and most black colleges are still located in the southern states. These learning institutions will be the main focus of this chapter.

Many of the historically black colleges and universities were born under adverse conditions, and even in modern times, they continue to struggle for recognition and survival. At the conclusion of the Civil War, a defeated and resentful South found itself with some four million newly freed men (former slaves) that were by and large uneducated. The question now was how to assimilate these freed men into Southern society.

Black participation in higher education began at the conclusion of the Civil War, for prior to that time slavery was the operating reality in the South, few free blacks were prepared to attend college, and given the prevalence of racial segregation few institutions were willing to admit

them (15:330). This is not to say that all blacks were uneducated however. Benjamin Banneker, a black man from Maryland, was a mathematician, an astronomer, and published a series of almanacs. Although at this time, there was no law expressly forbidding the education of blacks, they were not widely accepted at white institutions. Some of the older black institutions of higher learning were established to combat this rejection. For instance, in 1850 (approximately) a young black man sought the advice of a Presbyterian minister, John Dickey as to where he might receive training for the ministry. Mr. Dickey wrote to Princeton University, a Presbyterian college, seeking information on admission requirements for the young man. His reply from Princeton advised that the school did not accept Negroes. Taking matters into his own hands, Dickey founded Ashman Institute (renamed Lincoln University after the Civil War). Harris-Stowe State College in Missouri, The University of the District of Columbia, Cheney University of Pennsylvania, and Wilberforce University of Ohio are also historically black colleges (or universities) established prior to the end of the Civil War (16:253).

Some slaveowners taught their slaves to read, write, and calculate numbers but that was before the invention of the cotton gin. This invention caused the demand for slave labor to boom, bringing about the cruel slavery social

conditions in the South that are chronicled in our history texts. This change in social conditions caused resentment among the black slaves, giving rise to slave revolts. Two of the better known revolts were led by Denmark Vessey in South Carolina in 1822 and Nat Turner in Virginia in 1831. Both leaders were black men who could read and write. This fact spurred a reaction, a law that forbade teaching blacks reading, writing or arithmetic (17:10). The drive to educate blacks in America sprang from a sense of Christian obligation on the part of Northern whites. After hundreds of years of suffering, these Northerners felt that the newly freed slaves must be given the opportunity to take full advantage of their new freedom and become self determining, responsible citizens. Southern whites for the most part did not harbor these same sentiments. Their attitudes can be summed up thusly: First, the ignorant whites opposed any kind of education for the Negro because they themselves were ignorant and unschooled and could not bear the idea of the Negro receiving an education which had been, up to that time, the prerogative of the upper class. Second, the better class of whites in the South realized that some kind of education should be given to the Negro, but believed that the nature of this education should be determined by the South and that the teaching should be done by Southern white people and later by the Negroes themselves. Third, there

was a strong feeling in the minds of the Southerners that the Northern teachers in the missionary schools were teaching the Negroes not only to aspire to social equality, but to distrust and hate the white people of the South among whom they would have to live. (17:69) The first of these new higher education institutions for the freed blacks were established by various white church denominations. Later, during the latter half of the nineteenth century, black churches began to establish black higher education institutions. These new schools were supported primarily by tithes from the congregations. In many cases ministers and church members acted as instructors and school administrators (15:331). The early black colleges were also heavily dependent upon white Northern benefactors (17:163). Public funding for black state colleges began in 1862 with the Morrill Act and the accompanying state land-grants. White Northern philanthropists established several foundations to educate both white and black Southerners. The John F. Slater Fund, the Daniel Hand Fund, the Julius Rosenwald Fund, and the Anna T. Jeanes Fund were to be exclusively devoted to the education of blacks. The major foundations established for southern education in general (blacks and whites) were the Peabody Fund, the Duke Endowment, and the General Education Board (17:163). Although Southern whites could not prevent the education of

blacks, Southern politicians definitely controlled it. Because these organizations wished to remain "apolitical" [Northern benevolent societies and religious groups] they allowed Southern political opinion to dictate the ends and means of Negro education. Determination of the quality and quantity of Negro higher education was relinquished to the most adamant enemies of Negro interests. Segregation was unquestioned, vocational education was given paramount importance, control of institutions and influence kept from Negro hands, and a policy of open inequity established in the dividing of funds to white and Negro schools. Southern legislative supervision of funds became explicit when state agents were appointed to administer Northern money. The agents were self-identified Southerners accountable to Southern interests. Jabez L.M. Curry, agent for both the Slater and Peabody Funds, publicly asserted that all Northerners should be prohibited, as menaces to the social order, from teaching in Negro schools (16:255). Southern whites also controlled the Morrill Act land-grant fund distributions. It was not until an amendment to the Morrill Act (twenty-eight years later):

that the black public institutions began to receive regular appropriations. Despite the amendment, the distribution was hardly equal, though, for after a decade of the amended Morrill Act, white colleges were receiving appropriations at a rate 26 times greater than were black colleges. (15:331)

The Federal Government also showed no intent to enforce the amended Morrill Act. From 1959-1960, black colleges comprised approximately six percent of the institutions receiving land-grant funds. Yet they received less than one-tenth of one percent of the approximately \$910,000,000 dispensed by the Federal Government (16:260). The Morrill Act in effect afforded the opportunity to swallow up black colleges and turn them into vocational institutions. The funds derived from the Morrill Act were used to upgrade white schools at the expense of black schools. For instance, from 1936-1937, black colleges received only 5 percent of the land grant funds expended in the South. An equitable distribution would have given the black colleges \$5 million instead of \$1.9 million. The difference was funneled to white colleges (18:352).

Another measure of control was the control of the curriculum and facilities at the black schools, it:

demanding that they [black colleges] be deprived of standard departments and facilities and of graduate and professional schools. Negro scholars, furthermore, could not be granted freedom to publish in white journals or to obtain national research grants...On financial grounds Negro colleges were denied chemistry, physics, biology, and geology facilities...they were denied departments of architecture, engineering, and business. Today (1968) only one state institution has a doctoral program, and that is restricted to education. The sole public law school received an appropriation so small last year that it could enroll only two new students. Not a single state Negro institution possesses a school of engineering, architecture, medicine, dentistry, journalism, or library science. (16:262)

Threats of, and actual physical violence were also employed tactics:

Workers [Northern whites working with blacks] in Charleston, West Virginia, early in that year [1868] received a note from the Ku Klux warning them that their efforts were unwelcome and must be stopped on pain of reprisal. No white family in the community could be found who would offer living accommodations to Northern women who taught Negroes. A male teacher at Frostburg was ordered to leave town or suffer violence, but he was protected by friendly citizens and allowed to remain. Negro teachers have been isolated by an additional panoply of forces: low salaries (until about 1945 the salary of the average Negro teacher for twelve months was less than half that of the average white for nine), heavy teaching loads, overly large classes, uncertain tenure, and poor teaching and living conditions, with no role in policy-making, no freedom in teaching, and no opportunity for recreation or social life. (16:262) Black colleges were not even considered for accreditation until 1930 and refused membership to the Southern Association [Southern Association of Schools and Colleges] until 1957. (16:240)

Some white colleges put forth a token effort to work with the black schools however:

The notion that time and effort spent in dealing with Negro college problems are "lost" underlies the foundering of the so-called "Adopt-a-College" plan. Supported by grants from the American Council on Education and the foundations, about two dozen Northern white colleges engaged in exchanges with Negro institutions. Pomona, for example allied with Fisk, Haverford with Livingstone, Cornell with Hampton, Indiana with Stillman, Michigan with Tuskegee, Brown with Tougaloo, Wisconsin with North Carolina A&T. Negro administrators thought the plan involved long-term interchange of students and teachers and concrete help with academic problems. But with some exceptions their white counterparts did not grant it the same importance. Often curious undergraduates would come for one-week visits, indigent graduate students for a semester's teaching, or junior faculty for two-day summer discussions: The experience has been painful as well as disillusioning



to many Negro colleges. Hoping for serious and mature communication, they received instead the condescension of rich tourists on an exotic holiday. (16:268)

Education for blacks in Northern states also met with some opposition. For instance, a schoolhouse for young black males was dragged into a swamp by the villagers in New Canaan, New Hampshire. When a black girl, Sarah Harris, was admitted to a school for white girls in Canterbury, Connecticut, the white students left. When the school's mistress recruited more black girls, she was subsequently jailed (19:371-372).

### Role

There are those who feel black colleges have outlived their usefulness. They propose that we combine the black schools with larger major institutions; after all, the days of Jim Crow are no longer with us. This passage and subsection are offered in response:

During the September 12, 1988 meeting of the House of Representatives, Subcommittee on Postsecondary Education, Committee on Education and Labor, Mr. Tim Valentine (U.S. Representative, North Carolina) stated:

Our Nation's black colleges and universities serve as a vital resource and training ground for many black Americans. These institutions have produced upwards of 70 percent of all black college graduates, including many of our nation's black business leaders, public officials, federal judges, doctors, lawyers, and scientists. In the future, these institutions will produce in excess of 300,000 black college graduates every ten years.

While HBCUs have educated a major portion of the nation's black college graduates, these institutions are beset with increasing problems. HBCUs serve some of the nation's most disadvantaged students, have slim endowments, and lack financial resources to develop programs that enable them to compete with other institutions. The institutions operate on small budgets, limited by their students' ability to pay and by small state appropriations. For these schools to continue fulfilling their special mission and scope, and to survive in the decades to come, these institutions will need additional support and greater resources. One promising source of support is through public-private sector partnerships which are already in place at some schools. This nation cannot hope to compete effectively in a high-tech society if we continue to ignore such a large pool of talent. At a time when blacks are underrepresented in the science and engineering field and HBCUs are confronted with increasing problems, I believe it is doubly necessary that we look for ways to provide new opportunities for black students and to strengthen black schools. Not only that group of students and those institutions, but all America, will benefit. (20:4)

The success black colleges have had with black students is indisputable. The idea that black higher education institutions have outlived their usefulness and should be combined with larger, better equipped majority institutions has some merit, although superficial in nature. There is still a bonafide need for black schools today. Black students are made to feel welcome at black colleges and universities. The informed reader is well aware of the growing number of "racial incidents" at predominantly white colleges and universities. Black colleges offer a positive nurturing environment for their students, an environment where the student can concentrate on his studies and not be

concerned with the pressures of racial prejudice (21:9). Students at black colleges are encouraged to take an active role in college life; this activity includes involvement in student government, sorority, and fraternal organizations. This involvement helps the student to develop the leadership and organizational skills that promote self-confidence; the self-confidence needed to be successful in today's globally competitive economy. Black students are not always afforded these same opportunities at majority educational institutions.

Because some of the students at black colleges are "late bloomers" or do not possess all the skills necessary for college work, remedial courses are traditionally available at these institutions. These schools are sometimes viewed as being academically weak because of the time invested in remedial training. "However, since the 1960s, more developmental education programs have been offered by all colleges because of the need for such courses (15:337)." A glowing testimony to the success of this approach to instruction can be found at Xavier University in New Orleans, Louisiana.

Xavier University is a small Roman Catholic black college with approximately 2,058 undergraduates. With the nation being concerned about the dearth of students studying mathematics and science, especially minority students, no

fewer than 55 percent of Xavier's undergraduates are majoring in science or math. Additionally, Xavier has placed 20 percent of its graduates in dental or medical schools, an enviable record for any school (22:60-61).

## V. CONCLUSIONS and RECOMMENDATIONS

### Data Analysis

The Wilcoxon Rank Sum Test tests for differences in the central values of samples from two independent samples. This technique tests the null hypothesis that the distributions for the two groups are the same. Rejection of the null hypothesis generally concludes that the central values for the two groups differ. Strictly speaking, however, one can only conclude that the two distributions are different.

Four samples were used for this analysis; the sampled years are 1984-1988. HBCACT1 is actual dollar amount of DOD R&D dollars obligated to HBCUs from 1984-1986. HBCACT2 is actual dollar amount of DOD R&D dollars obligated to HBCUs from 1987-1988. HBCPER1 is HBCU percentage of obligated DOD HEI R&D dollars from 1984-1986. HBCPER2 is HBCU percentage of obligated DOD HEI R&D dollars from 1987-1988. Analysis of the dollar amount awarded to the black colleges and universities in the years just prior to the five percent goal (1984-1986) and for two years after the five percent goal took effect (1987-1988), indicate no significant difference between the two groups. The test yielded a two-tailed P-value of .3865. This value indicates a 38.65 percent chance of a type I error, rejecting the null

hypothesis when it is true. Therefore to assert that there is a difference between the two populations assumes a risk of 38.65 percent. Analysis of the black college and university percentage of higher education R&D obligations for the same time period also indicates no significant difference between the groups with a two-tailed P-value of .1489.

### Problems and Suggestions

The following problems and suggestions are a synthesis of telephone interviews and written responses from 34 responding HBCUs:

The HBCUs indicate three main problem areas in winning contracts from DOD: lack of, or limited research and development capacity, the failure on the part of DOD to recognize the HBCUs as separate entities and what has been referred to as "creative resistance", a phenomenon brought about by resentment toward the beneficiaries of the set asides. Not all HBCUs experience these problems to the same degree however. Several of these schools have won DOD R&D contracts over the years and performed admirably. The HBCUs need assistance to be able to compete on equal footing with large majority higher education institutions.

The success that black colleges have realized, frequently with meager resources, is indisputable. Yet most black institutions of higher education suffer from "serious shortages of funds and employ underpaid

faculties that devote disproportionate amounts of their time to teaching" (21:15). (15:332)

This orientation toward teaching is still a reality in some cases, especially at the small liberal arts HBCUs. Some HBCUs can do the type of research and development (R&D) that interests DOD but many need assistance to branch into this area. Assistance is needed in developing the institutional infrastructure to administer research and development contracts. The infrastructure would include support staff to assist in writing proposals as well as monitoring and interpreting contracts. These individuals would also peruse the Commerce Business Daily and communiques from DOD to search for applicable contracts. Support staff is also needed to promote or market the capabilities of the college or university. The development of this type of infrastructure requires talented personnel. Recruiting this talent requires funding. Faculty members at HBCUs are frequently underpaid and needed for teaching classes. Their contributions to the needed infrastructure would therefore be limited. DOD can consider grants to needy HBCUs to help develop the needed infrastructure.

Human resource development is also an area where DOD can be of assistance. DOD should consider postdoctoral training for faculty interested in pursuing areas of interest to DOD. One way this can be accomplished is by

positioning DOD scientists on HBCU campuses to assist in R&D capacity building. DOD could also sponsor experienced R&D scientists from other HEIs to work closely with interested faculty members on the HBCU campus in a capacity building effort.

Another aspect of human resource development that requires attention are HBCU students. DOD can encourage prime research and development contractors to provide work-study scholarships for qualified students. This will provide the student with first hand experience with R&D opportunities and form direct linkages between the prime contractors, DOD, and the HBCU. DOD can also sponsor a visiting scholars program, by which promising students from HBCUs could attend science classes at larger, better equipped institutions. These students could serve as links between the parent HBCU and the larger HEI for a possible long-term partnership. Scholarships and grants for students pursuing areas of interest to DOD would also be appropriate. Recipients of the assistanceships would be required to work for DOD for a number of years in payment. Several HBCUs expressed a need for building and equipment upgrades. Some also expressed a more basic need for dormitory and classroom furniture. The Department of Defense's Defense Logistics Agency manages a surplus equipment program that the HBCUs qualify for. There is another program in effect



through NAFEO that provides surplus equipment to HBCUs, the Tools for Schools program. However, in some cases the would-be recipient is not in a position to accept the equipment. In more than one instance an HBCU expressed frustration at being offered equipment that would cost more to accept, because of maintenance costs or prerequisite building upgrades than the equipment was worth. Because of limited budgets, the HBCUs are wary of accepting equipment without investigating support requirements. The Tools for Schools program and others of this type are excellent and certainly contributions from these programs should be explored. The need for building and equipment upgrade is related to another need, the need for faculty members trained in doing the type of research and development that interests DOD. This effort not only requires the funds to attract this type of talent, but adequate institutional facilities as well. This also applies to talented students. Many promising students would not choose to attend a school with substandard equipment, facilities, and dormitories when a large majority institution can offer modern equipment, facilities, and comfortable well-maintained living quarters?

If the Federal Government and DOD is seriously interested in the HBCUs winning contracts, then funding is required. A stronger commitment to build the capacity to be

able to compete is what the HBCUs say is needed. Another area of concern to the HBCUs is the perceived lack of discrimination between them, a tendency to view them as an amalgam entitled HBCU. The talents, personnel expertise, facilities and the funding sources of these schools range widely, just as they do at other higher education institutions. Why brief representatives from an institution that has considerable experience contracting with DOD that they need to subscribe to the Commerce Business Daily (CBD)? This seemingly obligatory comment is offensive to some of the more experienced HBCUs. A CBD subscription does not win contracts, establishing a working relationship with a DOD contracting office does. Tailor the technical assistance workshops to meet the needs of the individual HBCUs.

Another manifestation of the same concern is the proper dissemination of information. Because of the nature of DOD's needs, most DOD high dollar value contracts to HEIs are in the R&D area. These contracts are highly technical and geared towards larger institutions with well developed graduate programs and modern equipment and facilities. According to NAFEO's HBCU capabilities inventory less than one third of the HBCUs have graduate programs in the high technology or hard science areas. With many of the HBCUs being geared towards teaching and possessing limited R&D capabilities, they cannot effectively compete with the

larger majority schools. These schools need more information on contract opportunities not requiring a high technology retooling effort. It was suggested that some of these "low technology" contracts be set aside for the small HBCUs. An alternative would be to allow funds for the purchase of equipment and facilities as part of the contract. Some HBCUs report that the request for proposals (RFPs) as published now often do not allow for the purchase of the equipment needed to do research and development. This therefore makes the proposal applicable only to the schools that already have the necessary capital equipment. Receiving RFPs that are inappropriate is also related to the perception that DOD representatives fail to recognize the HBCUs as separate entities. The feeling is that these RFPs are being sent indiscriminately. NAFEO publishes an HBCU capabilities manual that is available to all DOD contracting officers. Why waste paperwork and time sending an HBCU that specializes in medical research for instance, a RFP related to designing an aircraft wing? Furthermore sifting through the inappropriate RFPs only compounds the staffing problems at HBCUs.

A rather novel proposal for disseminating information on DOD R&D contracting opportunities involves soliciting the services of individual scientists at the HBCUs. This tactic would involve an effort to link the HBCU scientists that

have the required knowledge and skills with a DOD scientist or group of scientists to complete a project. A liaison of this nature would prevent the HBCU scientist from being impeded by lack of equipment or facilities since he would then have access to a DOD laboratory. The same tactic could be applied to HBCU scientists and scientists that work for major DOD contractors. The necessary information is already available from NAFEO's HBCU capabilities inventory. The inventory includes data detailing the expertise of the institutions' faculty.

A technical assistance workshop with scientists from interested HBCUs that will actually do the work along with those who will write the proposal and DOD scientists with experience in the applicable area would be useful.

There is also a feeling among some of the HBCUs that they are receiving only token cooperation from some DOD contracting officers, encountering creative resistance when seeking contract opportunities. The manifestation of creative resistance is limited only by the imagination of the contracting officer. An actual example submitted by one of the smaller, lesser known schools involved a situation whereby the school established a working relationship with a local DOD contracting office. They reported being successful at winning and completing several contracts. Unfortunately, when their contacts from that contracting

office relocated, the institution's representatives were told they had to "reestablish themselves."

HBCU and majority research institution partnerships are not always successful. The majority research institution scientist is sometimes preoccupied with his workload and career advancement requirements, tenure for instance. Meanwhile, the HBCU scientist is struggling with his teaching workload and other duties. The resulting missed appointments and phone calls that are not returned is discouraging to both partners. If DOD could actively monitor these partnerships, it would send a message that it is serious about its five percent goal, thereby encouraging a more cooperative effort from the partners.

An area of general concern involves the manner in which DOD conducts business. Is it really necessary that the contract proposals be written within the narrow guidelines of DOD legal and technical jargon? Are all the testing, accounting, documentation, and reporting requirements necessary? These requirements impose a formidable barrier and make bidding for contracts uninviting, especially for the novice. Perhaps the DOD contracting forms could be recast into a simpler format. These special DOD requirements add expense to a contract.

Establishing a quality point system for contract proposals might be an effective tactic. Points could be

awarded for qualities that make a contract proposal outstanding in some aspect. For instance, award points for subcontracting with an HBCU instead of merely showing plans to attempt such an effort. Presently, it is too easy for a prime contractor to assert that there are no HBCUs with the necessary capabilities for subcontracting. With all other aspects of the contract proposals being equal, this would lend advantage to the prime contractor that actually subcontracts with an HBCU.

#### Researcher Comments

The responses which provided the data for the problems and suggestions section include one from a college that did not provide input but suggested that a survey would be more appropriate for HBCUs because of the time required to draft a narrative (The workload of staff and faculty at HBCUs is mentioned in the problems and suggestions section). Another response that provided no data suggested that contacting NAFEO would provide the requested information. A third interviewee felt that he could not comment in good conscience; in his opinion, the faculty at his institution could do more to pursue grants and contracts from DOD.

There seemed to be some apprehension on the part of some of the schools with providing the requested information. Although a letter of introduction was sent to

the college president of each school that was solicited for information, there was some resistance to telephone interviews with strangers. One of the reluctant interviewees suggested that this information might be acquired from the White House Initiative organization on historically black colleges and universities (written input was later received from this institution, though). On more than one occasion the question of why this particular topic was chosen was posed.

There were also those respondents that greeted the research with enthusiasm and were more than eager to express an opinion; many extended an invitation to reestablish contact for more assistance if needed. Several respondents requested copies of the finished product.

Some individuals stated they had not received the correspondence and was unfamiliar with the information gathering effort, even though on some occasions a return letter from the college president had designated that individual as a point of contact. In most of those cases no response was received even after familiarizing the contact person with the thesis. Each investigative question was answered except one: How will DOD determine the effectiveness of the five percent goal? None of the replies from the Services or the Defense Logistics Agency indicated a method for determining the success of the DOD Five

Percent Goal, although each of the Services indicated that they had awarded funds to HBCUs. The question that remains is this: Is the program successful if three HBCUs receive five percent of the applicable DOD contracts? There appears to be no definite guidelines to determine success.

Each service has its own HBCU program that complements the work of the DOD/NAFEO liaison. For instance, the Defense Logistics Agency is coordinating the Manufacturing Technology program (MANTECH), the Navy's Office of Naval Research (ONR) has established a historically black college council, and the Air Force's Aeronautical Systems Division (ASD) established the ASD/HBCU Committee.

The Defense Logistics Agency (DLA) furnishes material support and services to the military. It is involved in supply support, contract administration, and technical and logistics services. To comply with the DOD Five Percent Goal, DLA initiated a project to train interested HBCUs how to bid for, secure, and administer contracts. The project supports DLA's MANTECH program and is coordinated through the Special Acquisition Office of the Defense Electronics Supply Center (DESC). This training endeavor is beyond the capabilities of DESC to fulfill with present manning, so DESC plans to use military reservists as trainers. The trainers must be volunteers and are expected to have a



procurement function specialty code. They must be certified as qualified for mobilization by their DLA gaining command, and be able to commit to the program for at least a year. Additionally they must reside in a reasonable geographic proximity to the institution to permit regular visits, and they must have attended the training session conducted by DESC (23:2). The trainer is expected to conduct a form of formalized training on the basics of contracting with the government. The training will be conducted during the reservists' annual two week "actual duty for training period (23:2)."

The Office of Naval Research's historically black colleges council has the following objectives:

To foster general support of meritorious research proposals originating at HBCs (historically black colleges); to assist selected HBCs in strengthening their capability to conduct quality research of interest to ONR; to assist in the development science training programs geared to increasing the participation of blacks and other minorities in research and development areas of interest to ONR; to coordinate the ONR HBC Program with similar programs in other General agencies. (24:42)

The Air Force's Aeronautical Systems Division formed the ASD/HBCU Committee to develop a plan for the HBCU initiative. The committee was directly responsible for an Broad Agency Announcement (BAA) that is a 100 percent set-aside for HBCUs/MIs in Aerospace Sciences Research and Development. This five year program is funded for

approximately \$10,000,000 to involve HBCUs/MIs in an exploratory development effort to increase advances in aeronautical sciences and technologies and to provide more options and solutions to Air Force flight system needs. It also seeks to enhance the national research capability in the aeronautical sciences (25).

The researcher only recently learned of the federally funded research and development centers. At this time detailed information on the management of these facilities continues to be elusive. This area is worth investigating to determine the benefits reaped by the managing institutions. As a final comment, the combination of money and political clout (two areas that are not strong suits of black colleges or blacks in general) is a proven effective partnership. Perhaps this alliance worked its "magic" in determining which institutions were afforded the opportunity to partake in managing an FFRDC. A possible tactic to involve other institutions in the management of an FFRDC would be to rotate this responsibility perhaps every five years. The next partner could begin to assume some responsibility at the three year point to assure a smooth transition. Someone with knowledge of the workings of the FFRDCs would have to determine the feasibility of this suggestion.

### Researcher Recommendations

1. Split the HBCUs and MIs from the SDBs and establish a separate measurable goal for them.
2. Establish a five percent goal compliance award for contracting officers. The award would include a monetary component and earning the award would depend on the number of, or dollar amount of contracts a contracting officer awarded to five percent goal entities.
3. Educate contracting officers and primary contractors (primes). They need to understand the five percent goal is not a handout or a case of reverse discrimination. The contracting officers and primes should be advised that the goal is an attempt to redress past discriminatory practices that allowed some of the majority institutions to prosper and grow at the expense of black institutions. Although the Jim Crow era is now an historical fact, many black institutions require assistance to overcome the ill effects that still linger. Contracts awarded under the five percent goal is an attempt to help the black higher education institutions become more competitive and self-reliant.
4. Those involved with the five percent goal should understand that this program is not a panacea, and set

asides alone will not solve HBCU contract procurement problems. The immediate impact of set asides tends to assist those with the capability but lacking the opportunity. Assisting those with the desire without the capability is another matter. More emphasis needs to be placed on building the capability to win DOD contracts.

There are instances when a DOD organization has contributed funds to improve the capability of an HBCU, though. Last year (1989) the Naval Oceanographic and Atmospheric Research Laboratory issued a \$66,700 grant to Jackson State University to upgrade the school's ocean and atmospheric science curriculum (26:5). However, a DOD organization whose mission is to increase the R&D capability at HBCUs could do much good.

5. The HBCUs should ensure that the infrastructure is in place to handle and properly route communications from NAFEO or other institutions. A misrouted communication concerning a contracting opportunity can easily become a lost opportunity.
6. The HBCUs can provide their students with more background information on the history of higher education for blacks. The students need to be made aware of the mission of the black college and how

it is still important today. Hopefully this effort will generate more contributions to the black colleges from alumni. Of course each institution will need to determine the extent of their alumni involvement and decide whether or not this tactic is appropriate.

### Conclusions

The DOD Five Percent Goal has the potential to do much good for the HBCUs. The results of the Wilcox Rank-Sum test does not indicate that the program has had a significant impact on the dollar amount or percentage of HEI contracts awarded to HBCUs as compared to all HEIs, but the program is still evolving. The five percent goal can not change in three years a condition that has existed for over one hundred years. Some of the concerns expressed by the HBCUs are presently being addressed by the NAFEO/DOD liaison. However, some of the institutions seemed unaware of the available assistance. On one occasion an HBCU expressed a specific need, when another HBCU, a few hours' drive away, had been selected to benefit from a project designed to address that particular need. Although many HEIs are historically black colleges or universities and are NAFEO members, this relationship does not necessarily imply fealty. Survival seems to be the operating reality.

The data base of responses was collected from approximately one third of the HBCUs. More written responses were promised but for whatever reason they have not arrived as of this writing. The failure to respond, is probably due to responding to so many surveys over the years and not seeing the fruits of the labor. Another reason could be that some of the schools do not feel that these contracts apply to them, therefore there is no need to reply. It is a fact that many DOD contracts are not applicable to the liberal arts colleges. For the most part these colleges are not oriented towards R&D, it is not a part of their mission. However, these institutions should bear in mind that there are opportunities to win DOD contracts that are not heavily oriented towards highly technical R&D for armament.

This undertaking has shed some light on the present black college predicament. The recurring theme throughout this work has been the need to build R&D capacity at the HBCUs. Without this capacity, no set asides or goals will likely make a significant difference. Fortunately, the problem is being addressed. The DOD Five Percent Goal represents an endeavor to pay a debt whose interest has been compounded to astronomical proportions.

Revisiting the five percent goal would be appropriate and is highly recommended. This study presents several suggestions, it now becomes a matter of implementation.

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## Vita

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| 13. ABSTRACT (Maximum 200 words) This study sampled the historically black college and university (HBCU) perspective on the Department of Defense Five Percent Goal. Each college was asked to comment on what black colleges need to become more competitive in the DOD contract award arena. The colleges were also asked to suggest ways that DOD could help in this regard. Their comments and suggestions comprise the second section of chapter V. The prevailing theme was a need to invest in research and development (R&D) capability at the HBCUs. The Wilcoxon Rank-Sum Test was conducted to determine the immediate impact of the five percent goal on R&D obligations to HBCUs. The results indicated no significant difference between the HBCU percentage of DOD higher education institution R&D obligations from the 1984-1986 sample and the 1987-1988 sample (The five percent goal took effect in 1987) There was also no significant difference between samples in dollar amount awarded to the HBCUs. |  |   |                                    |  |
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